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The Catholic school advantage and common school effect examined: a comparison between Muslim immigrant and native pupils in Flanders

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ABSTRACT

This study investigates the impact of Catholic schooling on academic achievement of native Belgian and Muslim immigrant pupils. The distinctive characteristics of Catholic schools in Belgium (Flanders) form an exceptionally suitable context to study this. Multilevel latent growth curve analyses are conducted with data from approximately 5,000 pupils across 200 primary schools. No support was found for the Catholic school advantage hypothesis as the overall achievement growth for math and reading was not significantly better in Catholic schools than in public schools. Likewise, no evidence was found for the so-called "common school effect" hypothesis: The learning growth of Muslim pupils was not significantly better in Catholic schools. In fact, the initial achievement gap was found to be higher in Catholic schools than in public schools. Implications of these findings are discussed.

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Introduction

Since the early 1980s, there has been a considerable amount of educational research focusing on the consequences of Catholic schooling on pupils' academic achievement (e.g., Bryk, Lee, & Holland, 1993; Hoffer, Greeley, & Coleman, 1985; Hofman, Hofman, & Guldemond, 1999; Keith & Page, 1985; Reardon, Cheadle, & Robinson, 2009; Van Cuyck-Remijsen & Dronkers, 1990). The importance of these studies can hardly be overestimated as their findings have spawned at least three different research foci, that is, school-effects research, research on school choice, and studies on social capital and inequities (see Morgan, 2001). A first finding of this research is that, while many studies report that pupils in (mainly secondary) Catholic schools outperform pupils with a comparable background who attend public schools, others argue that this Catholic school advantage primarily reflects a selection effect, that is, Catholic schools attract a superior student population (see Card, Dooley, & Payne, 2010; Elder & Jepsen, 2014; Noell, 1982; Willms, 1985; for evidence from a sample of primary Catholic schools, see Gibbons & Silva, 2011). A second important finding in previous research is the claim that Catholic schools more closely resemble the US ideal of "the common school" than do public schools, as many empirical studies suggest that the achievement gap between disadvantaged minorities and more privileged pupils is actually smaller in Catholic schools than in public schools (Bryk et al., 1993; Greeley, 1982; Jeynes, 2002; Keith & Page, 1985; Neal, 1997). However, the common school effect is not supported by all previous studies either (see Carbonaro & Covay, 2010; Hoffer, 1997; Lubienski & Lubienski, 2006).

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Until now, most studies on both effects of Catholic schools have been conducted in the United States. Accordingly, with respect to both achievement level and equity, our knowledge about the impact of Catholic schooling is largely restricted to the North American situation. But this limited purview is not representative of Catholic schooling elsewhere, for in the United States (a) only a small number of children attend Catholic schools relative to the number of children attending public schools; (b) the cultural or religious background of the pupil population attending Catholic schools is predominately Christian; and finally, (c) Catholic schools are almost entirely privately funded. Indeed, although Catholic parishes increasingly certify their teachers through state-approved agencies, beyond basic health and safety requirements direct state involvement in American Catholic education is fairly minimal. Taken together, each of these conditions potentially facilitates the aforementioned selection effects.

But what if there was broad access to a publicly financed Catholic school system, and what if a relevant share of the pupil population attending Catholic schools did not have a Christian background? In this study, we will examine such a case, namely, the effect of Catholic schooling in Flanders, the northern Dutch-speaking region of Belgium. The distinctiveness of the Flemish educational system provides a unique opportunity to examine both the suggested Catholic school advantage and common school effect. First, in Flanders, Catholic institutions are both omnipresent and dominant; as such, there is widespread access to Catholic schools. In fact, throughout Flanders the total number of Catholic schools rivals the number of public schools, and in virtually every city and town there is at least one Catholic school. Second, Catholic schools are almost entirely financed by the state, in more or less the same way that non-denominational public schools are financed (Brutsaert, 1998; Loobuyck & Franken, 2011). Third, a large number of non-Christian children attend Catholic schools. In some locations, there are even Catholic schools whose pupil composition consists entirely of Muslim immigrant pupils. As such, in Flanders the potential selectivity bias is reduced to a large extent. Consequently, the minority composition of Catholic schools provides a unique opportunity to examine the impact on different ethno-religious groups.

Even with the distinctive characteristics of Catholic schools in Flanders – which resemble public schools much more than is the case in the United States – parents tend to believe that Catholic schools provide much better education than public schools. This holds true for both ethnic majority and minority parents (Nouwen & Vandenbroucke, 2012). Yet, until now, research on the effectiveness of Catholic schooling in Flanders is scarce. One of the few available studies suggests that the positive effect of Catholic schooling on math achievement disappears when pupil background is taken into account (Opdenakker & Van Damme, 2006). To date, however, there are no studies that examine whether Catholic schools have an impact on the academic achievement of ethnic minority pupils generally, and Muslim pupils in particular. Hence, the purpose of this paper is to test the Catholic school advantage hypothesis and the common school effect hypothesis in the Flemish context.

Theoretical background

Catholic school advantage

First introduced in the 1980s by Coleman and colleagues (Coleman & Hoffer, 1987; Coleman, Hoffer, & Kilgore, 1982), the "Catholic school advantage" refers to the positive effect of Catholic schools on a pupil's learning. Independent of his work on Catholic schools, Coleman developed a more general theoretical model that could account for the Catholic school advantage. Here, we refer to his work on social capital (Coleman, 1988). In his interpretation, social capital describes the norms of trust and reciprocity that arise out of our social networks. Coleman argued that Catholic schools are supported by a functional community sharing two indispensable traits of social capital. First, there is a shared trustworthiness among members of the community. This reciprocal trust facilitates the exchange of useful information, but also a variety

of other resources essential to a healthy community. Second, within these networks there exists what Coleman calls a "density of outstanding obligations", meaning that available resources within a particular structure can be augmented by the fact that others within the community can be called upon to contribute to achieving the goals shared by all. Hence, the absence of one member (such as a parent) from a particular activity or event can be compensated for by the presence and attentive involvement of others. Moreover, even as Catholic schools have been forced to wrestle with new demographic and financial challenges, a core principle of Catholic education has continued to be that of promoting pupil learning, irrespective of an individual child's background. Taken together, these elements support and sustain stronger intergenerational networks between pupils, parents, and teachers in Catholic schools. This might not only positively affect school performance but also labor-market outcomes (see also Kim, 2011).

The Catholic common school effect

Above and beyond the Catholic school advantage, many scholars have argued that Catholic schools generate fewer inequities, and are particularly beneficial for (disadvantaged) ethnic minority pupils (Jeynes, 2002; Keith & Page, 1985; Neal, 1997). That is, by reducing inequalities between privileged and underprivileged students, Catholic schools are believed to better approximate one of the core ideals of the "common school" as envisioned by early American reformers like Horace Mann. This came to be known as the Catholic "common school effect" (Coleman et al., 1982).

The notion of social capital as described in the previous section is highly relevant to the Catholic common school effect. In many societies, it is members of various stigmatized ethnic and religious minority groups who frequently experience disaffection, exclusion, and considerable risk (Scheepers, Gijsberts, & Coenders, 2002). Risk factors include economic instability, compromised family structure (e.g., through migration or frequent mobility), poor health, and exposure to violence, and any or all of these may decrease the likelihood of normal development and well-being. Indeed, risk factors dramatically increase the chances of failure – in school, in relationships, and, later in life, in the labor market (Snel, Burgers, & Leerkes, 2007). Moreover, the external pressure to assimilate to dominant norms turns cultural and religious differences themselves into risk factors, and the risk increases as the cultural gap divides two dramatically different worlds (Van Kerckem, Van de Putte, & Stevens, 2013).

Given these risks, Catholic schools arguably have something to offer pupils whose access to crucial resources all too often is lacking in less cohesive school environments. These resources include the transference and shared experiences of beliefs and values through parents, school staff, and school peers, which may help to boost self-esteem, academic motivation, and positive relationships, particularly once the values in question have been internalized. In other words, if Catholic schools succeed in supplying higher social capital, then they are likely to help compensate for the lack of social capital among many of its marginalized minority students.

Of course, social capital is not the whole story. The Catholic Church has placed its concern for the poor and oppressed at the center of its social teaching for more than a century. This social teaching was put to the test as massive changes got underway in the second half of the 20th century, for as church membership began to decline and many urban parishes – both in North American and Western Europe – increasingly saw their largely White ethnic congregations opt for schools for their children outside of city centers, Catholic school enrollments often were replaced with much poorer, non-White, but notably also non-Catholic children. The dramatic change in pupil demographics in many urban Catholic schools was to test both the Catholic church's commitment to the poor and its ability to foster and maintain shared interests and expectations necessary for maintaining high quality education (Bryk et al., 1993; Greeley, 1982; Neal, 1997).

Previous studies

Although Coleman's (1988) study has been contested on methodological grounds (see Noell, 1982; Willms, 1985), the Catholic school advantage has been replicated in many studies and in different contexts (Dronkers, 2004; Jeynes, 2004). American studies with the High School and Beyond (HSB) data (Greeley, 1982; Keith & Page, 1985), with National Longitudinal Survey of Youth (NLSY) data (Neal, 1997), and with the National Educational Longitudinal Survey (NELS) data (Morgan, 2001), found generally that pupils achieved at higher levels in Catholic high schools than they did in public high schools and that the influence of ascribed background variables – such as socioeconomic background and minority ethnic/racial status – on academic achievement generally was stronger in public schools, implying that there is a higher level of equity in Catholic schools.

The findings in these studies are not without their critics, however. For instance, using the NELS data, Hoffer (1997) shows that when adjustments for prior achievement and other background variables are included, the differential benefits of Catholic schools for minority and lower socio-economic status (SES) students disappear. Instead, Catholic schools appear to have equal effects on students from more and less advantaged backgrounds. Similarly, Elder and Jepsen (2014) argue that the Catholic school advantage disappears after addressing the selection bias, and that Catholic schooling might even have a negative effect on pupils' math achievement. Other studies found that the positive effect of Catholic schooling was mostly related to the types and rigor of classes on offer, rather than more equitable treatment of pupils (Carbonaro & Covay, 2010). On the other hand, setting these two items in opposition is misleading, for, as Bryk et al. (1993) argue, the fact that all children – in particular the disadvantaged – receive a rigorous curriculum, reinforced by high teacher expectations, clearly demonstrates greater equity than one often can find in schools that employ tracking mechanisms, or take a deficit view of minorities.

Even so, it should be noted that neither the Catholic school advantage nor the common school effect are undisputed. In contrast to studies that focus on high schools, research that focuses on kindergarten and primary schools provides a much more complex picture, with some findings favoring public schools and others favoring Catholic schools (Carbonaro, 2006; Elder & Jepsen, 2014; Gibbons & Silva, 2011; Lubienski & Lubienski, 2006; Reardon et al., 2009). One finding from the recent Chicago Catholic School Study is particularly interesting. In this study, Hallinan and Kubitschek (2012) report that for Grade 8 the reading achievement growth of Hispanic pupils is higher in Catholic schools than in public schools, while the impact of Catholic schooling is *non-significant* for Black pupils. The authors of this study do not reflect on this differential finding, but the fact that the Hispanic groups' religious background is overwhelmingly Catholic, while that of most American Black children is more likely to be (Protestant) Christian, might be one of several possible explanations for this difference.

Why is this relevant? It may be relevant if the school climate is informed by a religious value system and ethos to which students can relate or, conversely, which may unwittingly have alienating effects. But if one's (ethno-)religious background *does* play a role, then it is worth considering how Catholic schooling in a predominately Catholic country might affect minorities whose ethno-religious background does not match that of the school.

Current study: purpose and context

In the present study, we will compare Catholic versus public schools with respect to math and reading achievement. We distinguish between two groups of pupils: native Belgians and (ethno-religious) Muslim pupils. By "native Belgian", we principally refer to White pupils whose ethnic/religious background is Flemish Catholic; conversely, by "Muslim", we refer to pupils whose parents or grandparents immigrated to Belgium and whose cultural/religious background is rooted in Turkish or Moroccan variants of Islam. Because we focus on background identity rather than belief

or current practice, but also because "Muslim" is often used as an ethnic identity marker, determining the actual religiosity of either group will not factor into our analysis.

Our study is conducted in the northern Dutch-speaking region of Belgium, that is, Flanders. The education system in Belgium was monopolized by the Catholic Church at the time of its independence in 1830 and even before then. It is only halfway through the 20th century that a state-controlled schooling system was fully established alongside the Catholic system (Brutsaert, 1998). In Belgium, public schools continue to be outnumbered by Catholic schools, especially in Flanders. According to the Flemish Department of Education, around 62% of the Flemish primary school population was enrolled in non-public schools in 2013. Approximately 99% of these non-public schools are Catholic, and in virtually every city and town there is at least one such school. Further, all Catholic schools are almost completely financed by the state, in exactly the same way that non-denominational public schools are financed (Loobuyck & Franken, 2011). It is fair to say, then, that the public–private distinction in Belgium (as in several other European countries) concerns not the means of its being financed or the mechanisms of accountability – which are virtually the same for all schools – but rather its curriculum content, its ethos, and how they are governed.

As we have seen, Catholic schools in Flanders enjoy a dominant position. This, combined with the fact that, currently, there is no Islamic school sector in Flanders (in contrast to The Netherlands and elsewhere, see Berglund, 2015; Musharraf & Nabeel, 2015), goes some distance in explaining why so many Muslim children can be found in Catholic schools. In fact, in Flanders there are even Catholic schools that serve a homogeneously Muslim pupil body. But it is also the case that many Muslim parents consciously *choose* a Catholic education for their child. Several reasons might explain this, and they are similar to the reasons why some native Flemish parents choose a Catholic school for their child.

Naturally, some parents choose a Catholic school simply because it is the nearest school to the home, but many consider Catholic schools to be more effective than public schools. That is, they buy into the reputation that Catholic schools have for being more academically rigorous (Dronkers, 2004; Nouwen & Vandenbroucke, 2012). Interestingly, however, many Muslim parents will choose a Catholic school for their child for *religious* reasons, that is, because they believe that their child's faith will be taken more seriously, even actively cultivated (also see Denessen, Driessen, & Sleegers, 2005). Relatedly, many Muslim parents expect that a belief in God will be integrated into school instruction, and also that the school's ethos will be more infused with moral values they consider important (Merry, 2005).

With respect to Muslim pupils in Flanders, our principal focus group, the following three points should be kept in the mind. First, in Belgium as in Western Europe generally, ethnicity for many minorities operates as a proxy for religious background. For instance, in Flanders 97% of Turkish and Moroccan pupils identify as Muslim (Agirdag, Hermans, & Van Houtte, 2011). Hence, it is more accurate to speak of ethno-religious minorities, as no clear distinction can be made between ethnicity and religion. Second, Muslim groups in Western Europe have a different socioeconomic situation than they typically do in North America. Muslims constitute a middle-class and a fairly mainstream minority in both Canada and the United States. Conversely, in Europe, Muslims generally are much worse off relative to the indigenous populations, particularly in Western Europe (Hellyer, 2009; Kohut, Lugo, Keeter, & Smith, 2007).

This is also the case in Flanders, where persons of Muslim background collectively constitute a comparatively disadvantaged and stigmatized class of minorities. Most live in the poorer districts of large and medium size cities and have rates of unemployment three to four times higher than the indigenous populations. Further, schools in Flanders, like schools elsewhere in Europe, reinforce these inequalities through a variety of selective mechanisms, including tracking structures, disciplinary procedures, and teacher expectations and recommendations (Agirdag, Loobuyck, & Van Houtte, 2012; Boone, 2013). This is reflected in lower-than-average performance levels, more frequent grade retention, overrepresentation in special education and lower secondary tracks,

and higher dropout rates during secondary education (Clycq, Nouwen, & Vandenbroucke, 2014; Van Praag, 2013).

Methods

Sample and variables

In this study, we used longitudinal data from the School Trajectories in Primary Education survey (SiBO survey, see Maes, Ghesquière, Onghena, & Van Damme, 2002), which followed a sample of roughly 6,000 Flemish pupils from kindergarten until the end of primary school (from 2002 to 2011). The 1st year of the Flemish primary school is named Grade 1 (mean age 6), and the final year is called Grade 6 (mean age 11). The sample consisted of 5,069 pupils, nested within 189 schools, of which 47% are Catholic schools and 53% public schools (see Table 1, for descriptive statistics).

Math achievement tests were administered at the end of Grade 1 through Grade 6. These tests contained 50 to 80 items and covered various domains such as elementary arithmetic, problem solving, and geometry. The reliability coefficients of the tests ranged between 0.86 and 0.93. The *reading comprehension* achievement tests were administered starting from Grade 3. Hence, we focus on reading achievement between Grade 3 and Grade 6. The reading comprehension tests consisted of various texts and multiple-choice questions that examined the semantic representation that pupils constructed from the text. The reliability of the reading tests ranged between 0.85 and 0.96. To be comparable across the years, all math achievement scores and reading scores were calibrated using item response theory.

Ethno-religious *country of origin* is included as a time-invariant covariate, and it is operationalized by the country of birth of pupils' parents and grandparents, obtained from a parent questionnaire. Pupils with one parent or grandparent born in a majority Muslim country (i.e., Turkey, Morocco, Algeria, and Tunisia) are categorized as "Muslim". When pupils were not categorized as Muslim and they had Belgian ancestry, they are categorized as "native". Most Muslim pupils in our sample were from Turkey (around 52%) and Morocco (43%), and the remaining 5% from Algeria and Tunisia.

Table 1. Descriptive statistics: means, and *SD* (var).

	Student Level		School level	
	Mean	*SD*	Mean	*SD*
Reading1				
Grade 3	0.000	7.198	41.530	2.668
Grade 4	0.000	7.161	48.139	2.612
Grade 5	0.000	6.905	52.162	2.696
Grade 6	0.000	7.625	57.361	2.628
Math1				
Grade 1	0.000	7.167	68.654	3.033
Grade 2	0.000	7.451	80.504	3.103
Grade 3	0.000	8.302	88.821	3.504
Grade 4	0.000	7.921	95.669	3.326
Grade 5	0.000	8.215	100.990	3.939
Grade 6	0.000	8.256	105.164	3.272
School sector				
0 = Public	n/a	n/a	0.529	n/a
1 = Catholic	n/a	n/a	0.471	n/a
SES1	0.000	0.925	–0.024	0.412
Gender				
0 = Boy	0.504	n/a	n/a	n/a
1 = Girl	0.496	n/a	n/a	n/a
Country of origin				
0 = Native	0.836	n/a	n/a	n/a
1 = Muslim country	0.164	n/a	n/a	n/a

[1] Grand mean centered.

Information about the pupils' parental SES is equally obtained from a parent questionnaire. A factor score of five indicators is calculated by using principal component analysis which included mothers' educational attainment (loading = 0.77), fathers' educational attainment (loading = 0.75), fathers' occupational status (loading = 0.71), mothers' occupational status (loading = 0.64), and the monthly income of the family (loading = 0.67) (range = −2.88 to 2.17; reliability = 0.74) (Reynders, Nicaise, & Van Damme, 2005). School-level SES is calculated by using the multilevel latent covariate model approach, which provides comparable (but more reliable) results as the typical aggregating individual scores approaches (see Lüdtke et al., 2008).

Finally, gender is included as a time-invariant covariate at the pupil level, and about half of the pupils in the sample are girls. Gender is taken as a control variable because many studies point to a gender gap in math and reading, although this gap sometimes varies with respect to immigrant children, as reported by Dronkers and Kornder (2014) (see Table 1 for descriptive statistics).

Design

As the dataset consisted of a repeated sample of pupils nested within schools and pupils are not randomly assigned schools, the use of multilevel latent growth curve (LGC) analysis is appropriate, which combines the virtues of multilevel analysis, structural equation modeling (SEM), and latent growth analysis (see also Palardy, 2008). In the LGC approach, the repeated achievement test scores are modeled as a latent variable with an intercept (indicating students' initial achievement) and a slope (indicating students' learning rate). In the current study, the linear growth trajectories are allowed to vary across both levels and across all time points. Thus, linear models with free time scores are estimated. We start by estimating a model without predictors, that is, the unconditional model. In Model 1, the impact of school sector (Catholic versus public schools) is examined. In Model 2, covariates for ethno-religious background, gender, and SES are included as control variables. SES is included at both at the student level and the school level (denoting school SES). In Model 3, a cross-level interaction between ethno-religious background and school sector is included to investigate differential effects of Catholic schooling for Muslim and native pupils. All covariates are time invariant. Missing data were handled with using the full information maximum likelihood method (FIML). FIML uses all available data to estimate parameters on the basis of the available complete data as well as the implied values of the missing data given the observed data (see Enders & Bandalos, 2001). The Bayesian information criterion (BIC) is included as information on model fit: The model with the lowest BIC is preferred, and a difference of 10 is regarded as "strong evidence" in favor of the model with the largest value (Kass & Raftery, 1995).

Results

The unconditional models for math and reading comprehension achievement are shown in Table 2. The initial math achievement is 68.597 and grows, on average, with 11.838 each year. The model for math has a BIC value of 182046. The initial reading comprehension achievement is 41.460 and grows, on average, with 6.608 each year. This model has a BIC value of 129892.

In Table 3, the parameters of the models for math achievement are shown. In Model 1, school sector is included into the models. Compared with the unconditional model, the BIC index shows strong evidence in favor of Model 1 (a difference of 294). The school sector covariate indicates that both the initial math achievement and the math achievement growth are significantly higher in Catholic schools than in public schools ($b = 1.703$; $p = 0.002$). Given an average standard deviation of approximately 3.5 for math achievement (see Table 1), the size of the difference in initial math achievement is "moderate", and the size of the difference in achievement growth is "small" (Cohen, 1988).

However, Model 2 makes clear that the difference between Catholic and public schools is less outspoken when controlled for background characteristics. The difference in initial math achievement reduces to one half of its original value ($b = 0.967$; $p = 0.036$), and the difference in math

Table 2. Multilevel LGC: unconditional model for math achievement and reading comprehension.

	Math		Reading	
	b	(*SE*)	*b*	(*SE*)
Means				
Initial achievement	68.597	(0.301)	41.460	(0.304)
Achievement growth	11.838	(0.248)	6.609	(0.131)
Student-level growth				
Grade 1	0.000	(0.000)	n/a	n/a
Grade 2	1.000	(0.000)	n/a	n/a
Grade 3	2.398	(0.268)	0.000	(0.000)
Grade 4	2.929	(0.372)	1.000	(0.000)
Grade 5	3.617	(0.540)	2.376	(1.087)
Grade 6	3.353	(0.511)	1.846	(0.429)
School-level growth				
Grade 1	0.000	(0.000)	n/a	n/a
Grade 2	1.000	(0.000)	n/a	n/a
Grade 3	1.709	(0.027)	0.000	(0.000)
Grade 4	2.285	(0.037)	1.000	(0.000)
Grade 5	2.735	(0.047)	1.611	(0.025)
Grade 6	3.080	(0.054)	2.402	(0.039)
N pupils	5,069	n/a	5,069	n/a
N schools	189	n/a	189	n/a
N pupils within schools	27	n/a	27	n/a
BIC	182,046	n/a	129,892	n/a

Note: Residual variances of the time points (student and school level) are estimated but not shown in the table. The full model with all parameters can be provided by the corresponding author if requested.

Table 3. Multilevel LGC: Unstandardized beta coefficients (*b*), standard errors (*SE*) and *p* values for **math achievement**.

	Model 1			Model 2			Model 3		
	b	(*SE*)	*p*	*b*	(*SE*)	*p*	*b*	(*SE*)	*p*
Means									
Initial achievement	67.794	(0.434)	0.000	69.632	(0.366)	0.000	69.521	(0.378)	0.000
Achievement growth	11.635	(0.271)	0.000	11.863	(0.260)	0.000	11.885	(0.263)	0.000
Sector (1 = Catholic school)									
Initial achievement	1.703	(0.000)	0.002	0.967	(0.462)	0.036	1.176	(0.462)	0.013
Achievement growth	0.419	(0.000)	0.039	0.331	(0.300)	0.177	0.298	(0.203)	0.142
SES (student level)									
Initial achievement	n/a	n/a	n/a	2.144	(0.127)	0.000	2.129	(0.128)	0.000
Achievement growth	n/a	n/a	n/a	0.244	(0.055)	0.000	0.247	(0.055)	0.000
SES (school level)									
Initial achievement	n/a	n/a	n/a	2.069	(0.595)	0.001	2.111	(0.595)	0.001
Achievement growth	n/a	n/a	n/a	0.405	(0.300)	0.177	0.418	(0.295)	0.156
Gender (1 = Girl)									
Initial achievement	n/a	n/a	n/a	−1.853	(0.231)	0.000	−1.845	(0.232)	0.000
Achievement growth	n/a	n/a	n/a	−0.358	(0.116)	0.002	−0.357	(0.116)	0.002
Country of origin (1 = Muslim)									
Initial achievement	n/a	n/a	n/a	−2.829	(0.363)	0.000	−2.253	(0.467)	0.000
Achievement growth	n/a	n/a	n/a	0.169	(0.137)	0.217	0.098	(0.184)	0.594
Catholic school x Muslim									
Initial achievement	n/a	n/a	n/a	n/a	n/a	n/a	−1.360	(0.643)	0.034
Achievement growth	n/a	n/a	n/a	n/a	n/a	n/a	0.131	(0.244)	0.590
N pupils		5,069			4,963			4,963	
N schools		189			187			187	
N pupils within schools		27			27			27	
BIC		181,752			167,647			167,664	

Note: Slope changes and residual variances of the six time points are included in the model but not shown in table. The full model with all parameters can be provided by the corresponding author if requested.

achievement growth becomes insignificant ($b = 0.331$; $p = 0.177$). It should be noted that Muslim students have lower initial math achievement scores than their native peers (−2.822, $p < 0.001$), while there is no statistical difference with respect to their achievement growth ($p = 0.217$).

Compared with Model 1, the BIC index shows strong evidence in favor of Model 2 (a BIC difference of 14105).

In Model 3, the cross-level interaction between school sector and country of origin is shown. A statistically significant cross-level interaction indicates that the initial math achievement gap between Muslim and native students is significantly bigger in Catholic schools than in public schools ($b = -1.360$; $p = 0.034$). In terms of math achievement growth, however, Model 3 indicates that Muslim students in Catholic schools do not have a statistically different learning rate than in public schools ($b = 0.131$; $p = 0.590$). In other words, the math learning curve of Muslim students is, on average, the same in public and Catholic schools.

For reading comprehension, the estimates are shown in Table 4. Compared with the unconditional model, the BIC index shows strong evidence in favor of Model 1 (a difference of 188). The school sector is only significantly related to initial reading comprehension: A higher initial reading achievement is found in Catholic schools ($b = 2.520$; $p < 0.001$). Given an average standard deviation of approximately 2.6 (see Table 1), the size of the difference in initial reading achievement is "large" (Cohen, 1988). However, the reading achievement growth does not differ significantly between Catholic and public schools ($b = -0.126$; $p = 0.366$).

After controlling for background variables (see Model 2 in Table 4), these results remain the same, although the initial achievement difference decreases in size to a "moderate" level ($b = 1.532$; $p < 0.001$). Moreover, while students from Muslim countries have a lower initial reading comprehension achievement, that is, they start with a gap of approximately 1 standard deviation ($b = -3.537$, $p < 0.001$), they have a higher achievement growth rate than native students ($b = 0.491$, $p = 0.016$).

Model 3 in Table 4 makes clear that neither the initial reading achievement nor the reading achievement growth differs significantly between Muslim and native pupils across public and Catholic schools. In other words, the initial reading achievement gap between native and Muslim

Table 4. Multilevel LGC: unstandardized beta coefficients (*b*), standard errors (*SE*) and *p* values for **reading comprehension.**

	Model 1			Model 2			Model 3		
	b	(*SE*)	*p*	*b*	(*SE*)	*p*	*b*	(*SE*)	*p*
Means									
Initial achievement	40.251	(0.435)	0.000	40.680	(0.340)	0.000	40.619	(0.352)	0.000
Achievement growth	6.673	(0.144)	0.000	6.787	(0.163)	0.000	6.782	(0.167)	0.000
Sector (1 = Catholic school)									
Initial achievement	2.520	(0.551)	0.000	1.532	(0.396)	0.000	1.647	(0.417)	0.000
Achievement growth	–0.126	(0.140)	0.366	–0.203	(0.145)	0.161	–0.195	(0.155)	0.208
SES (student level)									
Initial achievement	n/a	n/a	n/a	2.292	(0.114)	0.000	2.286	(0.116)	0.000
Achievement growth	n/a	n/a	n/a	0.202	(0.069)	0.003	0.199	(0.069)	0.004
SES (school level)									
Initial achievement	n/a	n/a	n/a	2.640	(0.547)	0.000	2.657	(0.547)	0.000
Achievement growth	n/a	n/a	n/a	0.507	(0.171)	0.003	0.508	(0.171)	0.003
Gender (1 = Girl)									
Initial achievement	n/a	n/a	n/a	1.619	(0.205)	0.000	1.619	(0.205)	0.004
Achievement growth	n/a	n/a	n/a	–0.320	(0.128)	0.012	–0.315	(0.129)	0.015
Country of origin (1 = Muslim)									
Initial achievement	n/a	n/a	n/a	–3.537	(0.350)	0.000	–3.241	(0.461)	0.000
Achievement growth	n/a	n/a	n/a	0.491	(0.204)	0.016	0.517	(0.262)	0.048
Catholic school x Muslim									
Initial achievement	n/a	n/a	n/a	n/a	n/a	n/a	–0.685	(0.615)	0.265
Achievement growth	n/a	n/a	n/a	n/a	n/a	n/a	–0.090	(0.365)	0.805
N pupils		5,069			4,914			4,914	
N schools		189			184			184	
N pupils within schools		27			27			27	
BIC		129,704			115,694			115,727	

Note: Slope changes and residual variances of the four time points are included in the model but not shown in table. The full model with all parameters can be provided by the corresponding author if requested.

pupils and the reading achievement growth advantage of Muslim pupils is the same in Catholic and public schools. As such, it is not surprising that the BIC value is larger in Model 3 than in Model 2, denoting a worse fit.

Discussion

The purpose of this study was to examine hypotheses on the Catholic school advantage and the common school effect in Flemish schools. The unique contribution of this study to the extant literature is its focus on the impact of Catholic schooling on ethno-religious minorities, specifically the impact on Muslim pupils in primary schools. The distinctive characteristics of the Flemish educational system – where the background culture is strongly Catholic, where there is universal and free access to Catholic schooling, and, finally, where large numbers of non-Christian minorities attend Catholic schools – provided an optimal context in which to examine the so-called Catholic school effect. Having employed multilevel LGC models with a view to addressing our research questions, this study yields a number of interesting results.

First, our results revealed that students entering Catholic schools had a higher math and reading achievement than students entering public schools. However, their learning rate for math and reading did not significantly differ between public and Catholic schools. That is, after taking gender, student-level SES, and school-level SES into account, we found that students learned at about the same pace in public and Catholic schools. Hence, we found no support for the hypothesis of a Catholic school advantage. Second, no support was found for the common school effect either. The learning rate of minority students with ancestry from Muslim majority countries did not statistically differ between public and Catholic schools. This holds true for both reading and math achievement. However, a third finding of this study is that Muslim students have lower initial math achievement in *both* Catholic and public schools than their native peers.

One limitation of this study is that we did not have a direct measurement of the religious background of students. For instance, we were unable to determine whether students with (grand) parents born in Muslim countries were particularly religious. As with other religious identities (e.g., Jewish, Hindu), one's religious label may only tell us something about a person's family or cultural background, and as such merely functions as a proxy for one's ethnic group. However, as we have explained earlier, previous studies have stated that about 97% of Turkish and Moroccan pupils identify themselves as Muslims, quite irrespective of whether they know anything about Islam or practice it in any way. The result is that it is almost impossible to differentiate the effects of religion versus ethnic background with respect to Muslims pupils. A second limitation of this study is that it only focused on two cognitive outcomes. To get a better understanding of possible denominational sector achievement differences, non-cognitive outcomes might be examined in future research. Although the non-cognitive domain often is the raison d'être for the existence of religious schools, studies thus far have seldom found denominational sector differences (e.g., Avram & Dronkers, 2011; Driessen, Agirdag, & Merry, 2016; Dronkers, 2004). Consequently, we would caution against unreasonably high expectations as they pertain to denominational schools. A third limitation of this study is that we did not focus on the role of teachers at all. However, an integral part of the functional community (that certainly would make Catholic schools more effective) are teachers: teachers that encounter parents outside the school, for instance, in church-related activities. This might be a significant starting point for future studies.

This study has a number of important practical and policy implications. It should be noted that in what many consider to be an age of secularization, religious schools as a whole are not losing their popularity. As we have already seen, Catholic schools are frequently chosen by Flemish parents for their good academic reputation. But we have also seen that this is the principal reason why Muslim parents likewise choose these schools for their children (Nouwen & Vandenbroucke, 2012). However, this study makes clear that there is little evidence to support these parental perceptions. Both native and Muslim students learn about the same amount in Catholic and public

schools. Moreover, on average, there is a higher initial math achievement gap between natives and Muslims in Catholic schools than in public schools. While Catholic schools are not less effective in educating Muslim minorities than public schools, the existing initial math achievement inequality in Catholic schools can lead to other problems. For instance, the achievement gap might actually harm the self-esteem of Muslim students in Catholic schools (Marsh, Trautwein, Lüdtke, Baumert, & Köller, 2007), worsening their disadvantage and thus working at cross purposes to one of the stated aims of Catholic schools, namely, to serve the underprivileged. In light of these possibilities, Flemish Catholic school officials, like Catholic school officials elsewhere in Europe, might invest more in the success of Muslim minorities by incorporating some form of multicultural education, that is, by paying greater attention to the specific cultural, psychological, and academic needs of their ethnic minority pupils of Muslim background and adapting school practices accordingly. By doing so, they could do much to provide a more welcoming educational space for ethnic minority pupils of Muslim background, something that is critically needed at a time when state schools in Europe are becoming increasingly adverse to Muslim identity, and a growing number of political parties in Flanders and elsewhere are calling for a ban on all forms of religious education (see Agirdag, Merry, & Van Houtte, 2016; Merry, 2015).

Disclosure statement

No potential conflict of interest was reported by the author.

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